



GE Power Systems

Perspectives on Distributed Generation and CHP

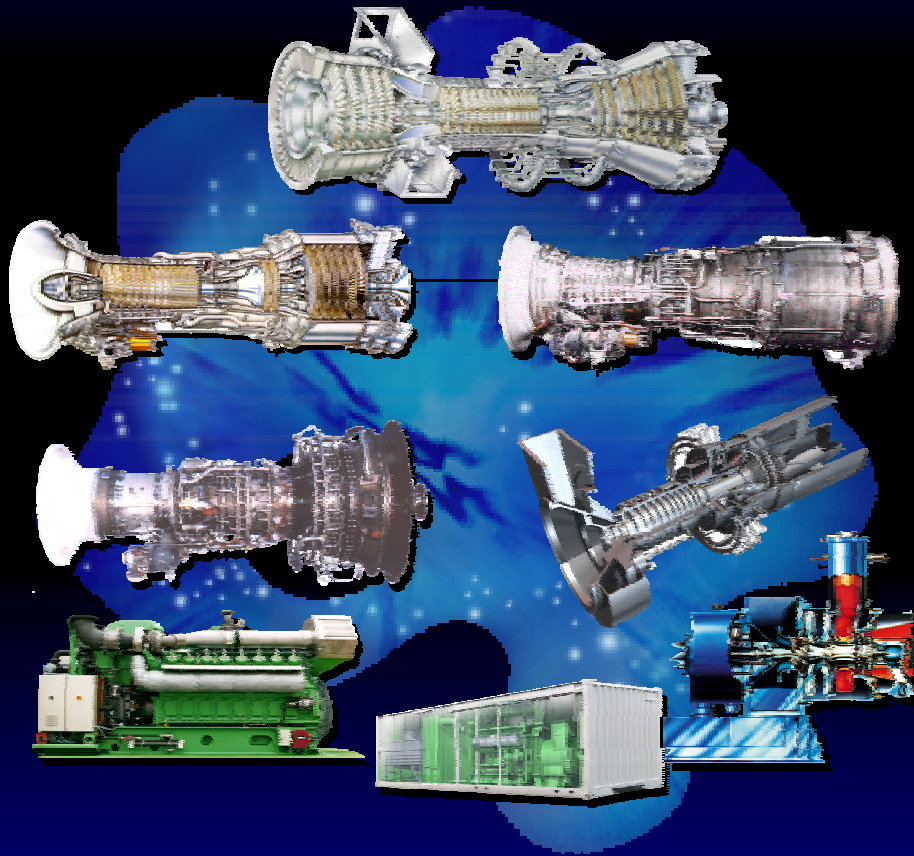
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GE Distributed Power

2002

Distributed Generation @ GE

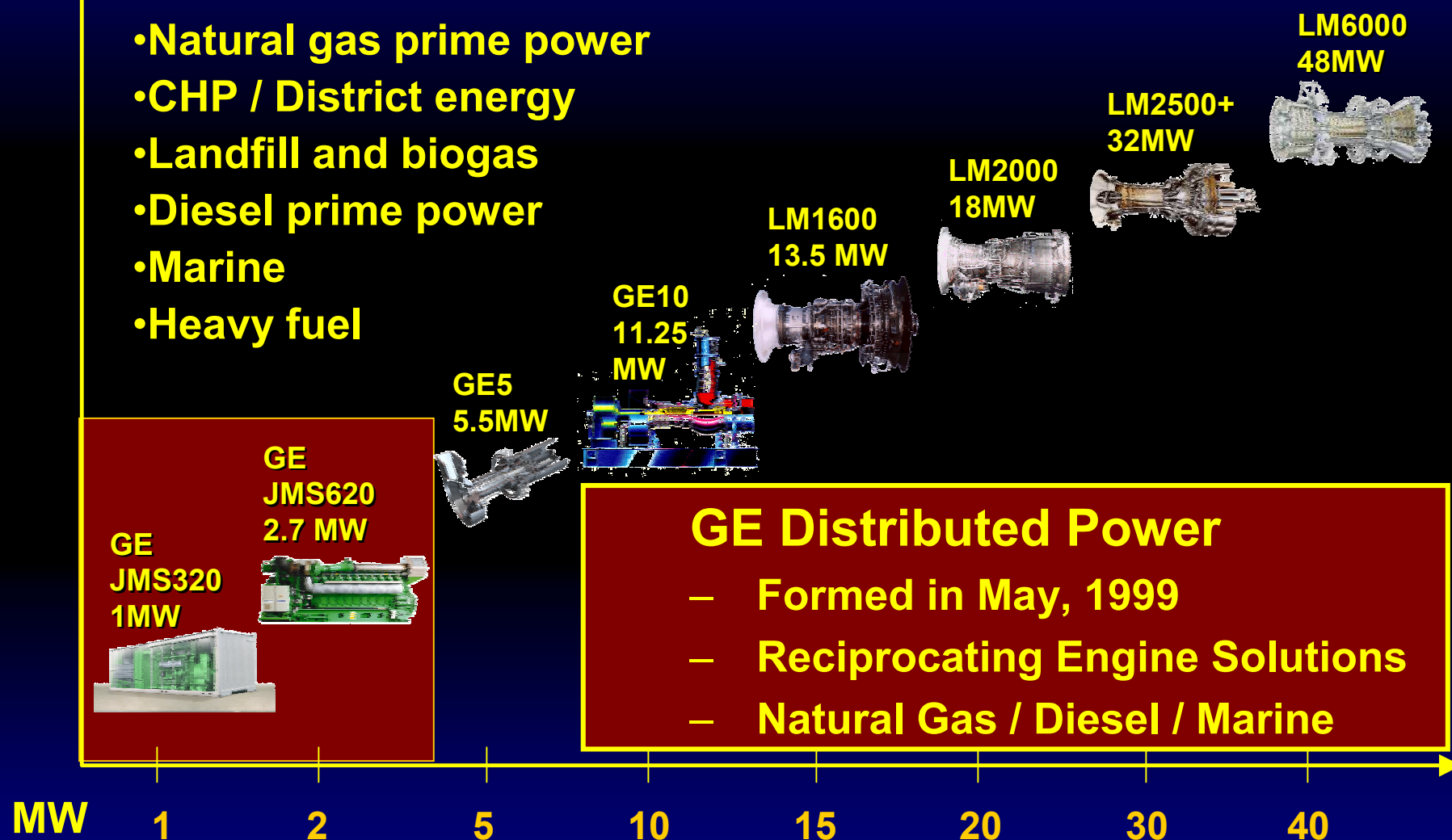


- **On-site or Local Power Generation of <50MW in Electrical Output**
- **Power Operated Simple Cycle or Cogen - in Parallel or Independent of the Grid**

Under 50 MW Products

GEDP MARKET SEGMENTS:

- Natural gas prime power
- CHP / District energy
- Landfill and biogas
- Diesel prime power
- Marine
- Heavy fuel



Reciprocating Natural Gas Engine Benefits

- Simple Cycle fuel efficiencies (electrical) range from 37.4% (500 kW) to 42% (1.6 – 2.7 MW)
- CHP system fuel efficiencies up to 90%
- All GE Jenbacher engines are capable of running on gas pressure of 5 psig or lower
- No output degradation over time
- Minimal derate for increase in ambient temperature
- Excellent load following capability
- Excellent heat recovery for hot water, absorption chilling and small steam demand loads

Applications of Reciprocating Engine Based Distributed Generation

CHP



Landfill Power



Micro-grid



Power in a Box
60 Hz Unit
Big Plant Efficiency
in a Small Package



Industrial

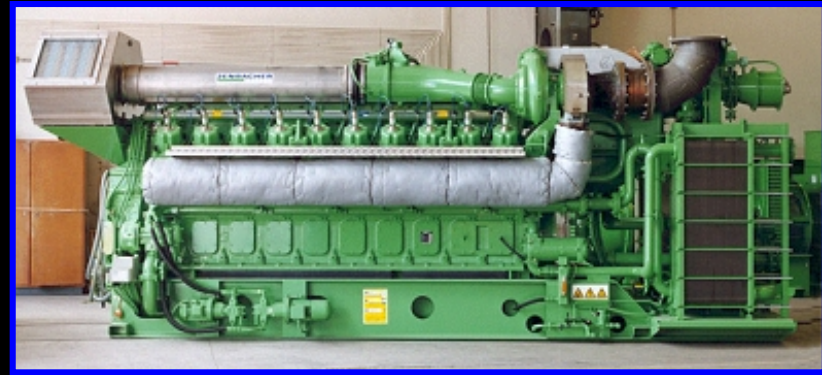


District Energy



CHP and DG Deliver

- Low Energy Cost
- High Availability and Reliability
- High Efficiency
- Low Emissions
- Low O&M
- Small Footprint
- Low Noise
- Short Delivery & Installation Cycle
- Reduced Need to Upgrade Utility T&D Systems
- Dual Fuel Capability



Springfield Utility Board



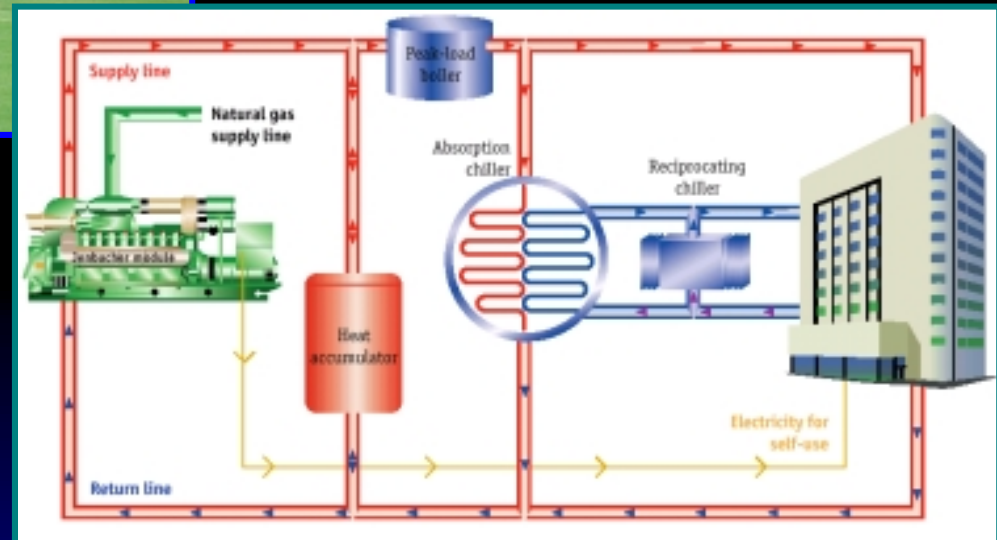
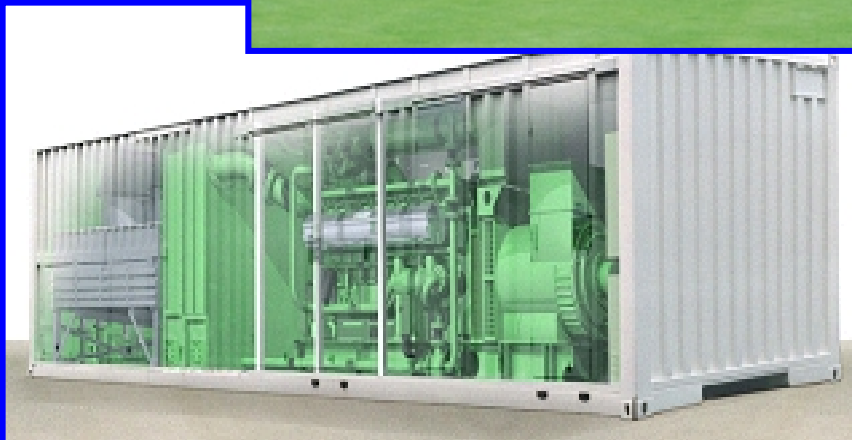
- 1 Site – 10 MW
- Fast Track Project
- Quick Response Power
- Wholesale Power
- Low Emissions

Five – 2.1 MW GE-Jenbacher Nat. Gas Recip Engine Gensets

City of Industry



- Fully Integrated, Contained CHP Package
- Power, Heating, Cooling
- Low Emissions
- Low Noise



1 MW GE-Jenbacher Power In A Box for Total Facility CHP

Distributed Generation Forecast

- **Distributed Generation and CHP Markets Will Continue to Broaden in Range and Scope**
- **Market Realities Will Force a Mix of Large and Small Scale Power**
- **In Mature Markets Developing Technology Entries Require Comprehensive Long Term Financial and Regulatory Support**
- **Emerging Technologies May Generate Large Market Opportunities**